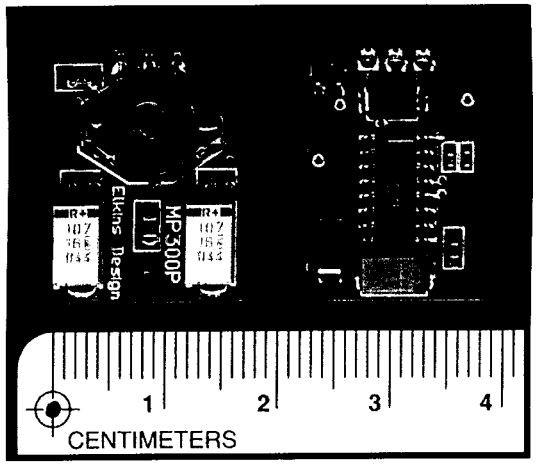


MiniPower 300P

DC to DC Converter

Congratulations! You have purchased the finest miniature Switch-Mode power supply for your projects. Due to its high efficiency this converter operates over the full life of two to seven alkaline cells. A unique architecture provides for both step-up and step down operation as required to service the load. The MP300P operates in a low-dropout linear mode when the input voltage is sufficiently above the output, and transitions to switch-mode boost operation at lower input voltages. Switch-over from either mode is seamless and automatic. Your application may be battery powered for portable operation, or use a wall adapter as required. During boost-mode operation, the MP300P regulator discharges a battery under **constant-power, which provides for the most efficient use of the battery's energy**, and will continue to provide power until the batteries are completely exhausted. Your new MiniPower converter has been engineered with the finest components available to provide trouble-free performance.

FEATURES

- 5V Output @ 300mA, (Vin ≥3.0V)
- 85% Average Efficiency
  (1.8V to 4.5V input, Min to Max load)
- Step-Up/Down Voltage Conversion
- 1.8V – 10.5V Input (2 to 7 cells)
- ESD Protection at Battery Input
- Shielded Inductor for Low EMI
- Reversed-Battery Protection
- Over-Voltage-Transient Protection
- ***Pin-compatible with TO220 linear regulators***

PRELIMINARY

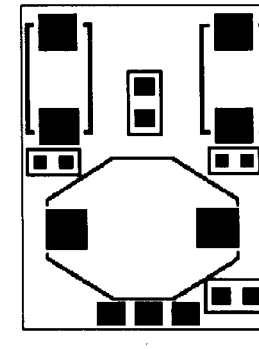
SPECIFICATIONS

(TA=+25 C)

PARAMETER	COND.	MIN	MAX
Input Voltage (1)			± 10.5V
Operating Voltage (2)		+ 1.8V	+ 10.5V
Output Voltage (Typical)	No Load 5V		± 5% (± 1%)
Max. Output Current (3)	Vout=		
3.6 to 10.5 V Input (3 Cells to 7 Cells)	- 5%	300mA	300mA
1.8 to 3.1V Input (2 Cells)		180mA	300mA
Output Ripple (4) (*Typical Average*)	1.8V to 5.4Vin		90mV (<50mV)
Output Noise – LDO	>5.5Vin		≤ 5mV
Switching Frequency		~25 Hz	250 kHz

1. Inputs greater than 10.5V applied longer than 3 to 5 sec. ***may cause damage!***
2. Startup at 1.0V with <10mA load. (***Typical)***
3. Continuous short-circuit of output and loading beyond specified limits ***should be avoided!***
4. Ripple max @ transition from boost to LDO (~5.4Vin)

CONFIGURATION



INPUT GND OUTPUT